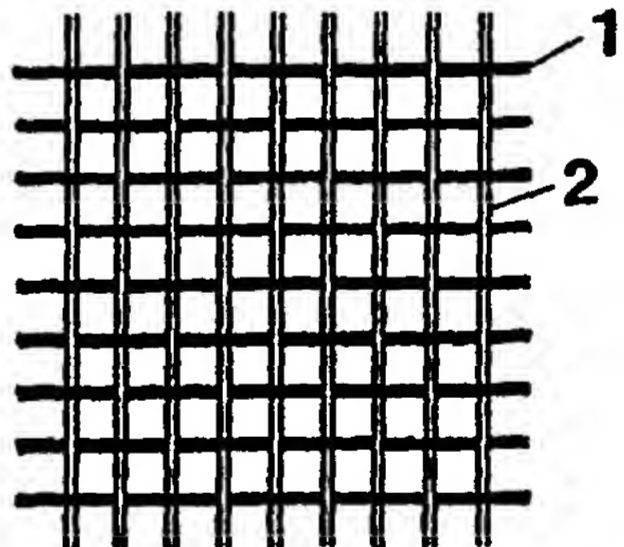


PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : D03D 15/02	A1	(11) International Publication Number: WO 96/37647 (43) International Publication Date: 28 November 1996 (28.11.96)
(21) International Application Number: PCT/IT96/00104 (22) International Filing Date: 23 May 1996 (23.05.96) (30) Priority Data: RM95A000348 26 May 1995 (26.05.95) IT (71)(72) Applicant and Inventor: DE CAVI, Francesco [IT/IT]; Via Flaminia Vecchia, 670, I-00191 Roma (IT). (74) Agent: MASCIOLI, Alessandro; A.N.D.I., Via Urbana, 20, I-00184 Roma (IT).		(81) Designated States: JP, US, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(54) Title: A DEVICE WITH MIXED FABRIC, CONSISTING OF METAL THREADS AND YARN, FOR EXTERIOR AND INTERIOR CURTAINS AND FOR WORKING CLOTHES FOR THE PROTECTION FROM RADIO-WAVES (57) Abstract <p>The device according to the present invention may be used for the realization of any kind of curtain, for exterior and for interior, as well as for the manufacturing of working clothes and accessories, and it mainly consists of a fabric of metal threads (1) and natural or synthetic yarns (2), that determines the realization of a net-like defence with continuity solutions of smaller dimensions that half the wave length of the radio-waves, which therefore can not overcome it. Said fabric alone allows the realization of curtains of any kind or it may be suitably inserted into conventional clothes.</p> 		

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AM	Armenia	GB	United Kingdom	MW	Malawi
AT	Austria	GE	Georgia	MX	Mexico
AU	Australia	GN	Guinea	NE	Niger
BB	Barbados	GR	Greece	NL	Netherlands
BE	Belgium	HU	Hungary	NO	Norway
BF	Burkina Faso	IE	Ireland	NZ	New Zealand
BG	Bulgaria	IT	Italy	PL	Poland
BJ	Benin	JP	Japan	PT	Portugal
BR	Brazil	KE	Kenya	RO	Romania
BY	Belarus	KG	Kyrgyzstan	RU	Russian Federation
CA	Canada	KP	Democratic People's Republic of Korea	SD	Sudan
CF	Central African Republic	KR	Republic of Korea	SE	Sweden
CG	Congo	KZ	Kazakhstan	SG	Singapore
CH	Switzerland	LI	Liechtenstein	SI	Slovenia
CI	Côte d'Ivoire	LR	Liberia	SK	Slovakia
CM	Cameroon	LT	Lithuania	SN	Senegal
CN	China	LU	Luxembourg	SZ	Swaziland
CS	Czechoslovakia	LV	Latvia	TD	Chad
CZ	Czech Republic	MC	Monaco	TG	Togo
DE	Germany	MD	Republic of Moldova	TJ	Tajikistan
DK	Denmark	MG	Madagascar	TT	Trinidad and Tobago
EE	Estonia	ML	Mali	UA	Ukraine
ES	Spain	MN	Mongolia	UG	Uganda
FI	Finland	MR	Mauritania	US	United States of America
FR	France			UZ	Uzbekistan
GA	Gabon			VN	Viet Nam

"A DEVICE WITH MIXED FABRIC, CONSISTING OF METAL THREADS AND YARN, FOR EXTERIOR AND INTERIOR CURTAINS AND FOR WORKING CLOTHES FOR THE PROTECTION FROM RADIO-WAVES"

The present invention concerns a device, consisting of a fabric mixed with metal threads and natural or synthetic yarn, for the realization of curtains of any kind, for exterior and interior, and for the manufacturing of working clothes for the protection from radio-waves.

The most recent developments of metrological technology are showing the presence of unnatural radio-wave concentrations in the living and working rooms of modern towns.

Said concentrations are due to the manifold sources of radio-waves of all frequencies, like radio waves, television waves, micro-waves and other more, due to the emissions of the many existing radio- and telecommunication systems and also to sources located in the different rooms, as electric household appliances, portable telephones, working machines and other devices.

The bombing with the radio-waves of different frequencies to which the organism of the inhabitants of modern megalopolis are subject cause the most serious pathologies - as the sanitary statistics are proving - and mostly leukaemia, cancers, detachment of the retina and others more.

On the other hand, some of the radio-wave frequencies are efficaciously filtered by the thickness of the building walls, limiting the pathologic effects to the sole living and working rooms in front of the windows through which all kinds of electromagnetic waves enter in the interiors.

It is the aim of the present invention to eliminate such serious environmental pollution as well as its pathologic consequences, just near the windows and near dangerous, located sources during work and in civil ambients.

The aim set forth is reached by means of the device according to the present invention, that may be used for the realization of any kind of curtain, for exterior and for interior, as well as for the manufacturing of working clothes and

accessories, mainly consisting of a fabric with metal threads and natural and synthetic yarn, that will determine a net-like defence with continuity solutions of smaller dimensions than half the wave length of the radio-waves, which therefor cannot pass through said fabric.

Said fabric allows the realization of curtains of any kind, or it may be suitably inserted inside conventional fabrics, always with the same purpose.

The present invention will be described more in detail hereinbelow relating to the enclosed drawings in which some embodiments are shown.

Figures 1 and 2 show two variants of the device according to the present invention, consisting of a fabric mixed with metal threads and natural or synthetic yarn, for the realization of curtains of any kind, for exterior and interior, and for the manufacturing of working clothes for the protection from radio-waves, in which alterlatively the warp and weft consist of metal threads and natural or synthetic yarns.

Figure 3 shows a device according to the present invention consisting of a fabric with alternate metal threads and yarns, along the warp as well as along the weft.

Figure 4 shows one application of the device according to the present invention, consisting of a panel of sliding and swinging curtain for the electromagnetic protection of a window.

Figure 5 shows a scheme of a roll-up out of a small metal net for the electromagnetic protection of a window.

Figure 6 shows a variant for a balcony roll-up curtain.

Figure 7 shows the use of the device for the manufacturing of a protection overall for a person working on machines emitting radio-waves.

The enclosed figures show a fabric mixed with metal threads 1 of aluminium, copper or other metals and natural yarn 2, of wool, cotton, synthetic or other material, prepared for realizing respectively the warp, the weft or both, so as to allow the realization of curtains 3, 4

for interior and 5 for exterior, for the electromagnetic protection of windows and/or rooms, and realizing a defence with continuity solutions smaller than half the wave length of the radio-waves.

Relating in particular to figure 4, the device according to the present invention allows the realization of a sliding and swinging curtain 3, consisting of a plurality of panels P provided with hollow spaces 6 for the insertion of metal net defences 1 or, in a variant, of plate defences, that stop the radio-waves.

A similar defence with a metal net 1 may be realized like a roll-up 7, as it is shown in figure 5, for determining the electromagnetic protection corresponding to the exact dimensions of a window.

The screening of exterior spaces may be also realized by means of the variant of the device according to the present invention shown in figure 6, in which the balcony curtain 8 consists of an original cloth T and of the small metal net 1 placed between a covering cloth 9.

All above described variants of the device according to the present invention may be used for manufacturing protection overalls 10, white coats, gloves, hats and working clothes and glasses, which all may be used in risk areas like plants with microvawe welders, radio bridges, radar systems and similar.

According to the present invention, covering tapestry for particularly exposed walls may be realized, consisting of small metal nets inserted into cloth or paper.

CLAIMS

1. A device characterized in a fabric mixed with metal threads (1) of aluminium, copper or other metals and natural yarn (2), of wool, cotton, synthetic or other material, prepared for realizing respectively the warp, the weft or both, so as to allow the realization of curtains (3, 4) for interior and (5) for exterior, for the electromagnetic protection of windows and/or rooms, and realizing a defence with continuity solutions smaller than half the wave length of the radio-waves.
2. A device according to claim 1, characterized in that it is inserted in a sliding and swinging curtain (3), consisting of a plurality of panels (P) provided with hollow spaces (6) for the insertion of metal net defences (1) or, in a variant, of plate defences, that stop the radio-waves.
3. A device according to claim 1, characterized in that it is of the roll-up kind (7), as it is shown in figure (5), for determining the electromagnetic protection corresponding to the exact dimensions of a window.

4. A device according to claim 1, characterized in that it is inserted into a balcony curtain (8) that consists of an original cloth (T) and of the small metal net (1) placed between a covering cloth (9).
5. A device according to claim 1, characterized in the manufacturing of protection overalls (10), white coats, gloves, hats and working clothes and glasses, which all may be used in risk areas like plants with microvawe welders, radio bridges, radar systems and similar.
6. A device according to claim 1, characterized in small metal nets inserted into cloth or paper for the realization of covering tapestry for particularly exposed walls.

1/2

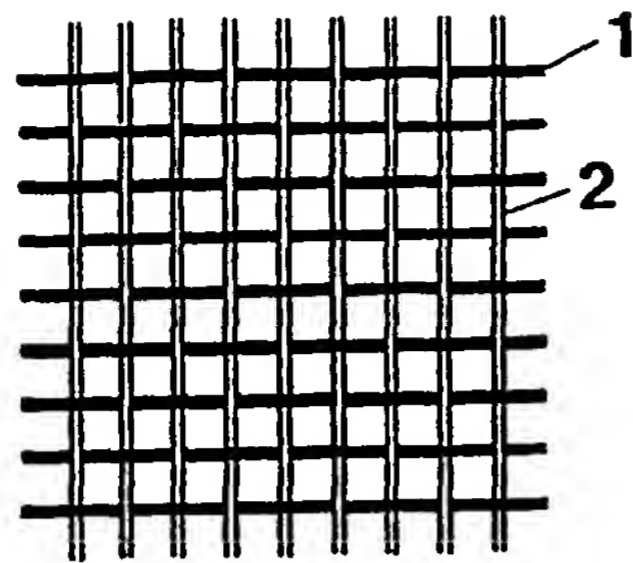


FIG. 1

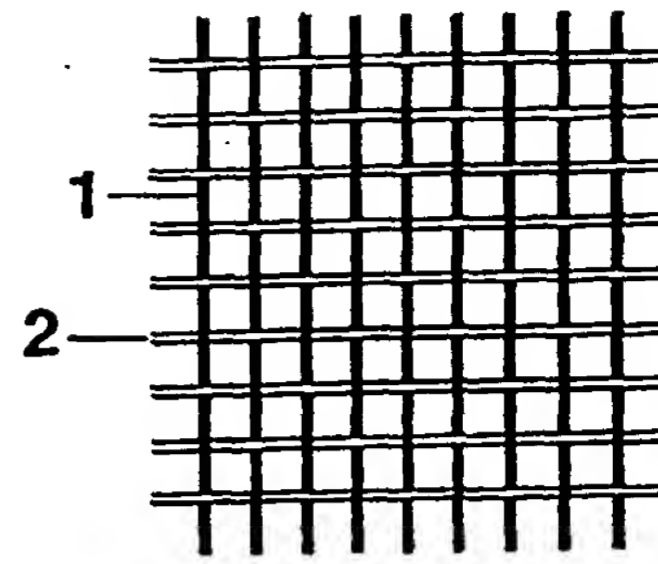


FIG. 2

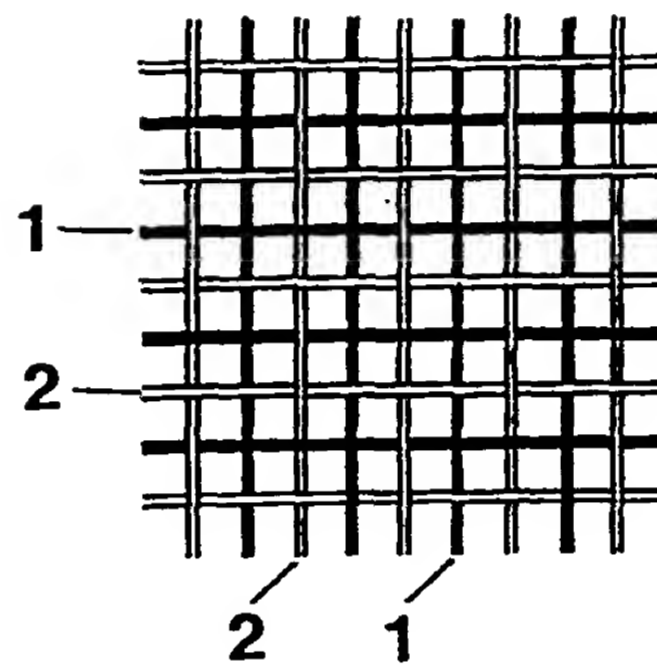


FIG. 3

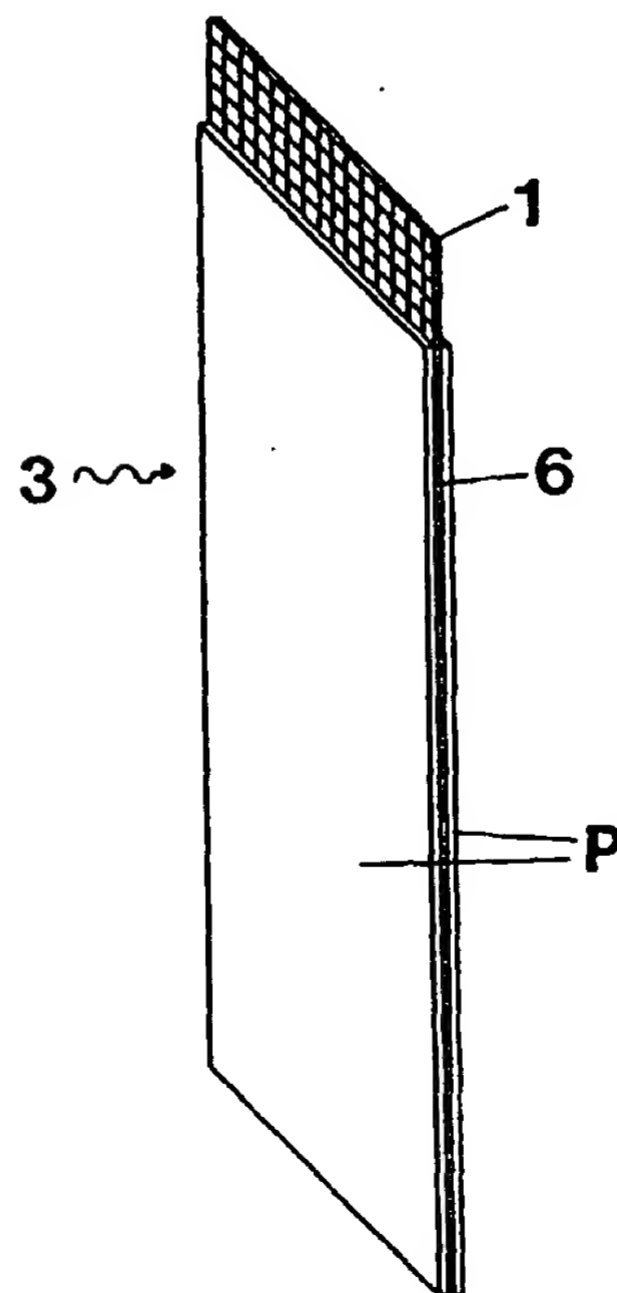


FIG. 4

2/2

FIG.5

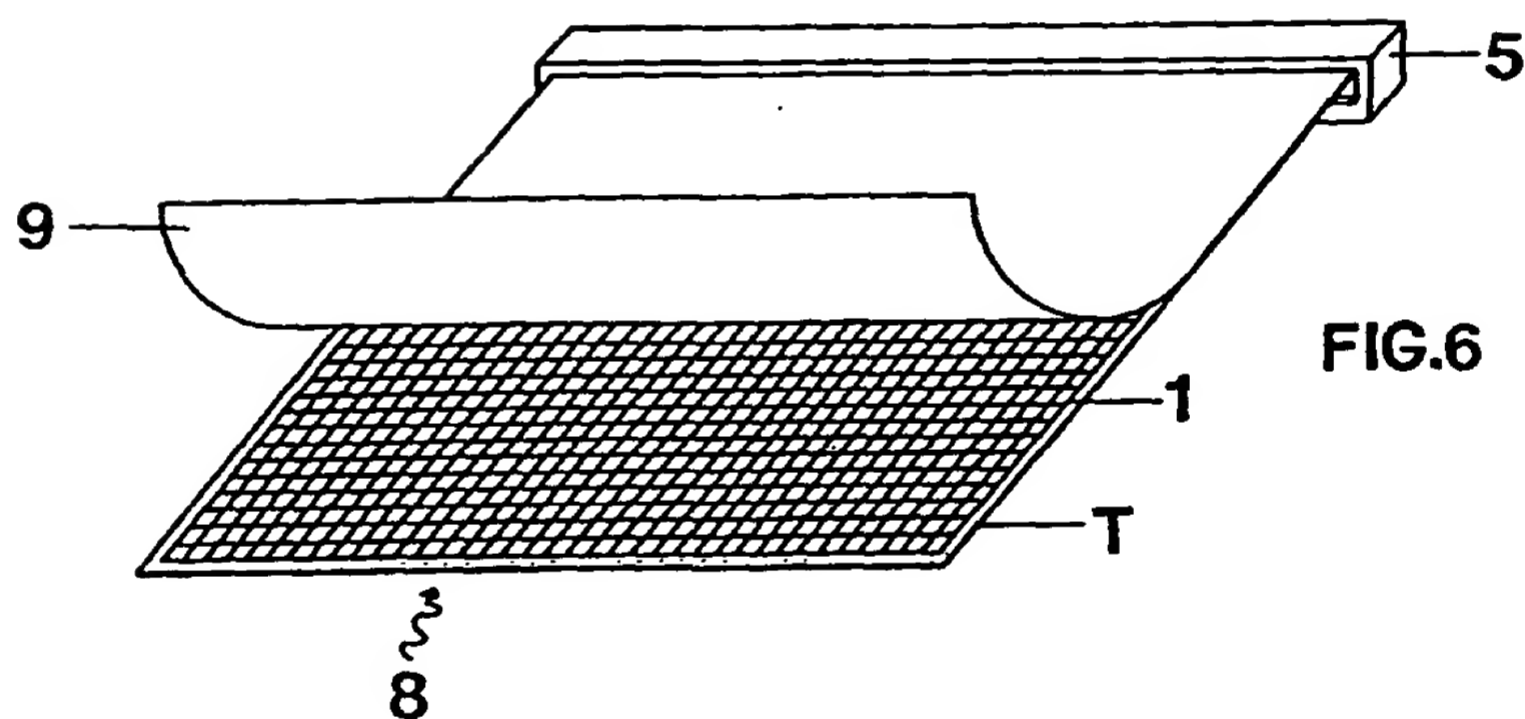
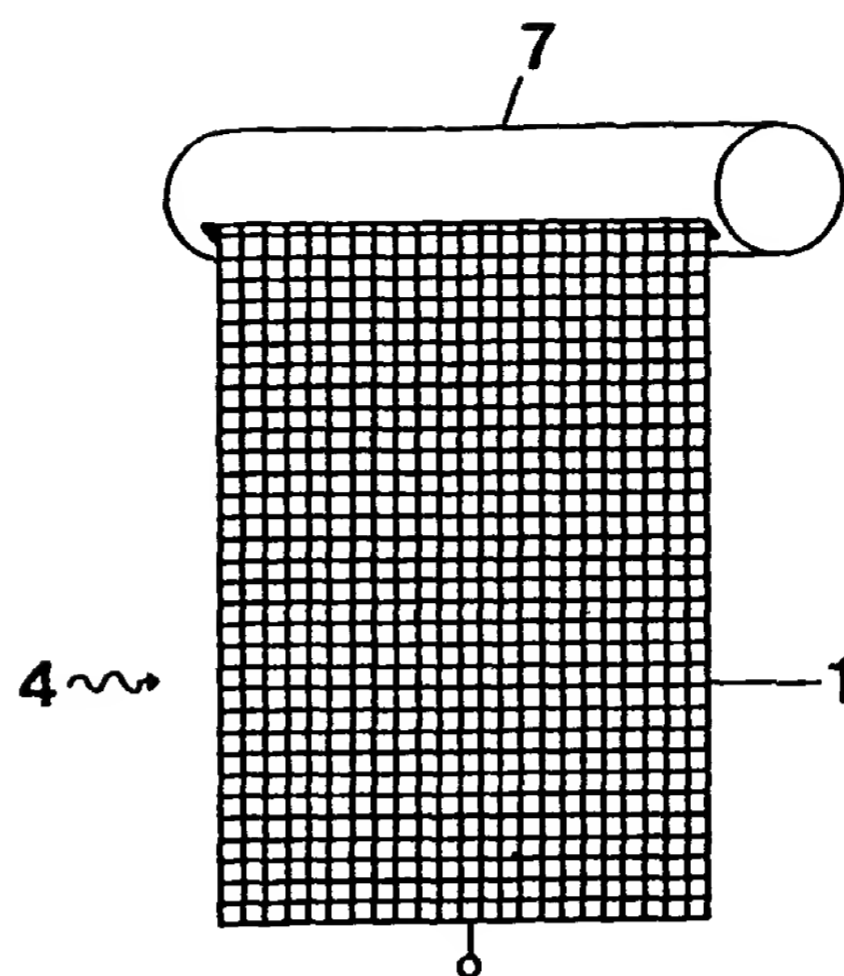


FIG.6

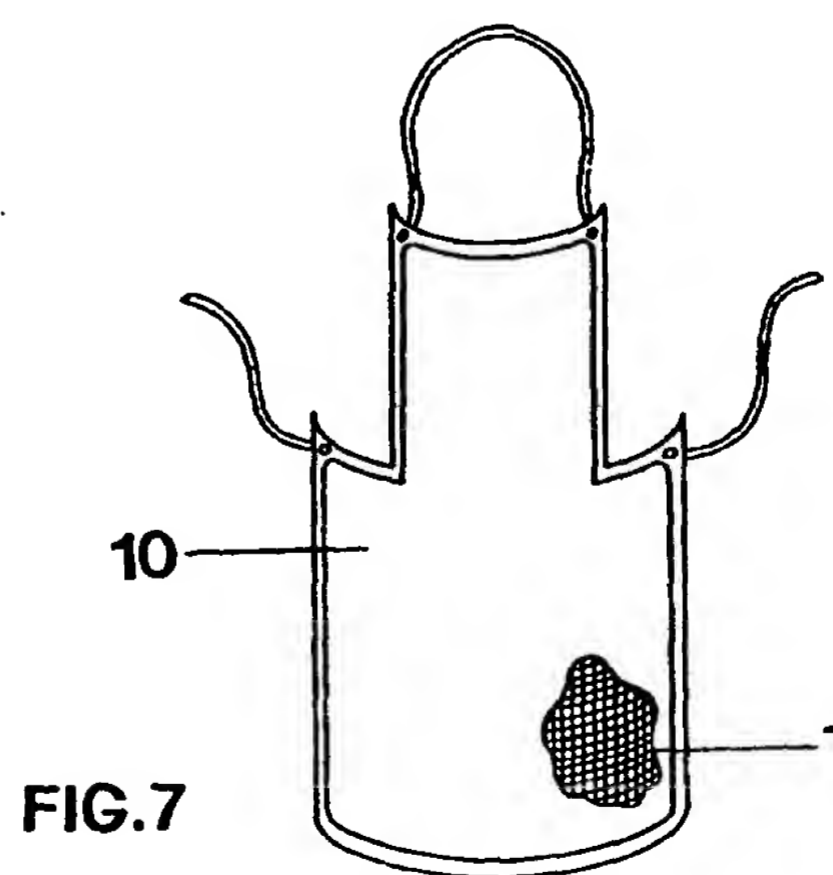


FIG.7

INTERNATIONAL SEARCH REPORT

Inter nal Application No
PCT/IT 96/00104

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 D03D15/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 D03D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	GB,A,572 811 (CRAWSHAW) 22 November 1945 see claims 1,4	1-5
Y	EP,A,0 383 059 (FINEX) 22 August 1990 see abstract	1,5
Y	DE,C,827 023 (HANS PAUL) 7 January 1952 see claims 1,2	1-4
A,P	DATABASE WPI Week 9625 Derwent Publications Ltd., London, GB; AN 96-249726 XP002012910 & RU,A,2 045 922 (MILITARY MED RES INST) , 20 October 1995 see abstract	1,5

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- *A* document member of the same patent family

Date of the actual completion of the international search

9 September 1996

Date of mailing of the international search report

20.09.96

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3016

Authorized officer

Boutelegier, C

INTERNATIONAL SEARCH REPORT

Int. Application No.
PCT/IT 96/00104

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FR,A,2 275 359 (GREZE) 16 January 1976 -----	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IT 96/00104

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB-A-572811		NONE	
EP-A-383059	22-08-90	DE-U- 8907655	09-11-89
		AU-B- 5098790	05-09-90
		CA-A- 2045409	16-08-90
		CN-A, B 1045428	19-09-90
		DE-U- 9018020	10-03-94
		WO-A- 9009473	23-08-90
		EP-A- 0458851	04-12-91
		JP-T- 4506545	12-11-92
		KR-B- 9410630	24-10-94
		US-A- 5103504	14-04-92
		CN-A- 1091484	31-08-94
DE-C-827023		NONE	
FR-A-2275359	16-01-76	NONE	